Electrical data CASR 6-NP

At T_A = 25°C, V_C = + 5 V, N_P = 1 turn, R_L = 10 kΩ, internal reference, unless otherwise noted.

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Primary nominal current rms	I_{PN}	A		6		
Primary current, measuring range	I_{PM}	A	-20		20	
Number of primary turns	N_P	-		1,2,3		
Supply voltage	V_C	V	4.75	5	5.25	
Current consumption	I_C	mA		$15 + \frac{I_P\ (mA)}{N_S}$	$20 + \frac{I_P\ (mA)}{N_S}$	N_S = 1731 turns
Reference voltage @ I_P = 0 A	V_{REF}	V	2.495	2.5	2.505	Internal reference
External reference voltage	V_{REF}	V	0		4	
Output voltage	V_{OUT}	V	0.375		4.625	
Output voltage @ I_P = 0 A	V_{OUT}	V		V_{REF}		
Electrical offset voltage	V_{OE}	mV	-5.3		5.3	100% tested V_{OUT} - V_{REF}
Electrical offset current referred to primary	I_{OE}	mA	-51		51	100% tested
Temperature coefficient of V_{REF}	TCV_{REF}	ppm/K		±5	±50	Internal reference
Temperature coefficient of V_{OUT} @ I_P = 0 A	TCV_{OUT}	ppm/K		±6	±14	ppm/K of 2.5 V - 40°C .. 85°C
Theoretical sensitivity	**Gth**	mV/A		104.2		625 mV/ I_{PN}
Sensitivity error	ε_G	%	-0.7		0.7	100% tested
Temperature coefficient of **G**	**TCG**	ppm/K			±40	- 40°C .. 85°C
Linearity error	ε_L	% of I_{PN}	-0.1		0.1	
Magnetic offset current (10 x I_{PN}) referred to primary	I_{OM}	A	-0.1		0.1	
Output current noise (spectral density) rms 100 Hz .. 100 kHz referred to primary	i_{no}	µA/Hz^{½}		20		R_L = 1 kΩ
Peak-peak output ripple at oscillator frequency **f** = 450 kHz (typ.)	-	mV		40	160	R_L = 1 kΩ
Reaction time @ 10 % of I_{PN}	t_{ra}	µs			0.3	R_L = 1 kΩ di/dt = 18 A/µs
Response time @ 90 % of I_{PN}	t_r	µs			0.3	R_L = 1 kΩ di/dt = 18 A/µs
Frequency bandwidth (± 1 dB)	**BW**	kHz	200			R_L = 1 kΩ
Frequency bandwidth (± 3 dB)	**BW**	kHz	300			R_L = 1 kΩ
Overall accuracy	X_G	% of I_{PN}			1.7	
Overall accuracy @ T_A = 85°C	X_G	% of I_{PN}			2.2	
Accuracy	**X**	% of I_{PN}			0.8	
Accuracy @ T_A = 85°C	**X**	% of I_{PN}			1.4	

LEM reserves the right to carry out modifications on its transducers, in order to improve them, without prior notice

Electrical data CASR 15-NP

At T_A = 25°C, V_C = + 5 V, N_P = 1 turn, R_L = 10 kΩ, internal reference, unless otherwise noted.

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Primary nominal current rms	I_{PN}	A		15		
Primary current, measuring range	I_{PM}	A	-51		51	
Number of primary turns	N_P	-		1,2,3		
Supply voltage	V_C	V	4.75	5	5.25	
Current consumption	I_C	mA		$15 + \frac{I_P\ (mA)}{N_S}$	$20 + \frac{I_P\ (mA)}{N_S}$	N_S = 1731 turns
Reference voltage @ I_P = 0 A	V_{REF}	V	2.495	2.5	2.505	Internal reference
External reference voltage	V_{REF}	V	0		4	
Output voltage	V_{OUT}	V	0.375		4.625	
Output voltage @ I_P = 0 A	V_{OUT}	V		V_{REF}		
Electrical offset voltage	V_{OE}	mV	-2.21		2.21	100% tested V_{OUT} - V_{REF}
Electrical offset current referred to primary	I_{OE}	mA	-53		53	100% tested
Temperature coefficient of V_{REF}	TCV_{REF}	ppm/K		±5	±50	Internal reference
Temperature coefficient of V_{OUT} @ I_P = 0 A	TCV_{OUT}	ppm/K		±2.3	±6	ppm/K of 2.5 V - 40°C .. 85°C
Theoretical sensitivity	Gth	mV/A		41.67		625 mV/ I_{PN}
Sensitivity error	ε_G	%	-0.7		0.7	100% tested
Temperature coefficient of G	TCG	ppm/K			±40	- 40°C .. 85°C
Linearity error	ε_L	% of I_{PN}	-0.1		0.1	
Magnetic offset current (10 x I_{PN}) referred to primary	I_{OM}	A	-0.1		0.1	
Output current noise (spectral density) rms 100 Hz .. 100 kHz referred to primary	i_{no}	µA/Hz^{½}		20		R_L = 1 kΩ
Peak-peak output ripple at oscillator frequency f = 450 kHz (typ.)	-	mV		15	60	R_L = 1 kΩ
Reaction time @ 10 % of I_{PN}	t_{ra}	µs			0.3	R_L = 1 kΩ di/dt = 44 A/µs
Response time @ 90 % of I_{PN}	t_r	µs			0.3	R_L = 1 kΩ di/dt = 44 A/µs
Frequency bandwidth (± 1 dB)	BW	kHz	200			R_L = 1 kΩ
Frequency bandwidth (± 3 dB)	BW	kHz	300			R_L = 1 kΩ
Overall accuracy	X_G	% of I_{PN}			1.2	
Overall accuracy @ T_A = 85°C	X_G	% of I_{PN}			1.5	
Accuracy	X	% of I_{PN}			0.8	
Accuracy @ T_A = 85°C	X	% of I_{PN}			1.2	

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